

**Aviation Safety Investigation Report
199802266**

**Boeing Co
B737
British Aerospace Plc
BAe 146-300
Beech Aircraft Corp
Super King Air**

18 June 1998

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NOTE: All air safety occurrences reported to the ATSB are categorised and recorded. For a detailed explanation on Category definitions please refer to the ATSB website at www.atsb.gov.au.

Occurrence Number: 199802266 **Occurrence Type:** Incident
Location: 19km E Sydney, Aerodrome
State: NSW **Inv Category:** 4
Date: Thursday 18 June 1998
Time: 1120 hours **Time Zone** EST
Highest Injury Level: None

Aircraft Manufacturer: British Aerospace Plc
Aircraft Model: BAe 146-300
Aircraft Registration: VH-EWM **Serial Number:** E3179

Type of Operation: Air Transport Domestic High Capacity Passenger
Scheduled

Damage to Aircraft: Nil
Departure Point: Sydney NSW
Departure Time: 1124 EST
Destination: Coffs Harbour NSW

Aircraft Manufacturer: Boeing Co
Aircraft Model: 737-377
Aircraft Registration: VH-CZH **Serial Number:** 23660

Type of Operation: Air Transport Domestic High Capacity Passenger
Scheduled

Damage to Aircraft: Nil
Departure Point: Darwin NT
Departure Time: 0722 EST
Destination: Sydney NSW

Aircraft Manufacturer: Beech Aircraft Corp
Aircraft Model: B200C
Aircraft Registration: VH-AMM **Serial Number:** BL-125

Type of Operation: Air Transport Domestic High Capacity Passenger Scheduled
Domestic High Capacity Passenger Scheduled
Damage to Aircraft: Nil
Departure Point:
Departure Time:
Destination:



Approved for Release: Thursday, October 8, 1998

The Departures North controller was controlling a Beechcraft Super Kingair B200C, radio callsign Alpha-Mike-Mike, and a British Aerospace BAe146 radio callsign Echo-Whiskey-Mike. Both aircraft had departed Sydney to the south-east. The crew of the Kingair were flying a radar departure, on a heading of 120 degrees, maintaining 5,000 ft. The crew of the BAe146 were flying a runway 16L COOKS ONE standard instrument departure (SID).

The Departures North controller confused the callsigns of the two aircraft and, although intending to turn the B200C, mistakenly instructed the crew of the BAe146 to turn left onto a heading of 350 degrees. The BAe146 was then cleared to leave 5,000 ft on climb to flight level 240. The combination of both instructions placed the BAe146 in the Approach South/Director controller's airspace and in potential conflict with a Boeing B737 on left downwind for runway 25 that had been assigned descent to 5,000 ft.

Both the Approach South controller and the Departures North controller recognised that the aircraft were in conflict as soon as the BAe146 started to turn onto the assigned heading and issued remedial instructions to both crews.

The required separation standard was either 1,000 ft vertically or 3 NM horizontally. Analysis of the radar data indicates that the B737 did not descend below 5,500 ft and that the BAe146 did not climb above 4,600 ft. The vertical difference of 900 ft occurred while the aircraft were less than 3NM apart and there was consequently an infringement of the separation standards.

The crew of the BAe146 sighted the B737 and were able to maintain visual separation.

The investigation revealed that the Departures North controller had worked six extra shifts on overtime or emergency duty in the previous 7 weeks, including an overtime shift the previous day. Fatigue was considered to be a contributory factor.

LOCAL SAFETY ACTION

Air Traffic Control Management at Sydney made two recommendations as a result of this incident:

"Recommendation 1. That strategies be put in place to limit the amount of overtime or extra duties worked by terminal control unit (TCU) staff. Should the present measures be withdrawn, other measures will be necessary".

"Recommendation 2. That the mode of operation, 16 Departures/25 Arrivals, be reviewed so as to permit two outbound radials to the north for different performance aircraft".

BASI SAFETY ACTION

As a result of this investigation and a number of similar occurrences, the Bureau of Air Safety Investigation conducted an investigation of systemic issues at the Sydney terminal control unit and issued report B98/90 on 18 August 1998. Nine recommendations were made in the report. The following two recommendations are considered relevant to this investigation.

R980159

The Bureau of Air Safety Investigation recommends that Airservices Australia reassess the human factor hazard analysis for both Stage One and Stage Two of the long term operating plan (LTOP) safety cases so that the mitigating strategies applied to identified hazards adequately allow for the fundamental limitations of human performance. In reassessing this hazard analysis, BASI recommends that Airservices Australia seek the assistance of human performance expertise.

R980160

The Bureau of Air Safety Investigation recommends that Airservices Australia consider restructuring the current roster operating in the Sydney TCU to ensure that contemporary fatigue management research is translated into meaningful duty hour regulations. In any restructure of the roster, BASI recommends that Airservices Australia expand its absentee management program to include individuals who expose themselves to the risks of fatigue by participating in excessive amounts of overtime and/or emergency duty.

